

EXHIBIT 3



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**City of New York vs. Amerada Hess Corp., et al.,
Case No. 04 Civ. 3417**

EXPERT REPORT OF

Marcia E. Williams 1/22/09

Marcia E. Williams
LECG, LLC
2049 Century Park East
Suite 2300
Los Angeles, CA 90067

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USTs, knew that the use of MtBE would increase under the 1990 Clean Air Act, and still believed the UST regulations were protective.

- **Opinion #4:** Mr. Moreau ignores or downplays the key role played by state agencies in developing and enforcing tailored UST programs. If state government agencies and/or local governments believed that additional regulation was necessary to protect human health or the environment in their jurisdictions as a result of MtBE in gasoline, they had the ability to adopt such additional regulations or tailor enforcement programs.
- **Opinion #5:** Mr. Moreau does not properly consider the fact that federal and state liability laws, both before and after the enactment of the federal UST regulations, provided a strong incentive for petroleum companies to minimize all releases into the environment including releases of MtBE to groundwater.
- **Opinion #6:** Mr. Moreau inaccurately states that throughout the 1980s and into the 1990s, small releases of petroleum product from USTs were of minimal concern to either petroleum companies or the EPA.

In addition to these opinion areas, I also address certain specific statements made by Mr. Moreau in his report.

VI. Detailed Opinions

- A. **Opinion #1:** Mr. Moreau downplays or ignores the fact that federal and state regulatory agencies developed UST regulatory programs prior to the significant increase in MtBE use under the Clean Air Act that were designed and understood to be protective of human health and the environment.

In Mr. Moreau's report, he states that "*leaks from storage systems have long been recognized by petroleum marketers*" (p. 51) and that furthermore these companies knew that storing MtBE in USTs would result in widespread groundwater contamination, but the industry chose to "whitewash" the issue.³ While Mr. Moreau makes reference to the federal UST regulations (p. 42) in describing the chronology of the leaking UST issue, he fails to properly put into context that these regulations represented the culmination of a long regulatory process and that those persons or businesses who owned or operated USTs had reason to believe, as EPA clearly did, that these new regulations included standards that were protective of human health and the environment.

³ On p. 72 of his report, Mr. Moreau states that: "*The petroleum industry was very well aware that large numbers of underground storage systems were leaking or at risk of leaking when they introduced MtBE as an octane enhancer for gasoline in 1979 and as an oxygenate in the 1990s*" but "*despite this knowledge, oil refiners chose to make MtBE a major constituent of their gasoline.*" He further states that the industry failed to draw attention to the MtBE issue and that "*instead of providing warnings, the industry chose to whitewash the issue.*" (p. 74).

evaluate the extent and nature of the leaking UST problem and identify technologies and practices that would be implementable and protective. The end result of this process was a regulatory program the EPA determined was protective of human health and the environment.

1. Congress required the EPA to adopt UST regulations that were protective of human health and the environment.

In passing legislation establishing environmental regulatory programs, Congress not only provides the EPA the authority to address specific environmental issues through regulation but also provides EPA with a general standard or goal to be met by the regulations. The general standard for the EPA's UST regulations was that these regulations be protective of "*human health and the environment*." This general goal is specified in Congress' direction to the EPA to develop release detection, prevention, and corrective action regulations for USTs:

*The Administrator [i.e., EPA], after notice and opportunity for public comment, and at least three months before the effective dates specified in subsection (f) shall promulgate release detection, prevention, and correction regulations applicable to all owners and operators of underground storage tanks, as may be necessary to protect human health and the environment. [emphasis added]*⁸

The statute also specifically directed the EPA to develop release detection standards that would protect human health and the environment:

The regulations promulgated pursuant to this section shall include, but need not be limited to, the following requirements respecting all underground storage tanks
*(1) requirements for maintaining a leak detection system, an inventory control system together with tank testing, or a comparable system or method designed to identify releases in a manner consistent with the protection of human health and the environment. [emphasis added]*⁹

This general goal of "protecting human health and the environment" is consistent with the Congressional goal established for most other regulations developed under the Resource Conservation and Recovery Act, including numerous rulemakings which I either directed or participated in. Congress was clear that protection of human health and the environment was an absolute requirement and was not to be balanced with economic costs or other

⁸ Section 9003(c) of Subtitle I of the Resource Conservation and Recovery Act.

⁹ *Ibid.*

implementation considerations.¹⁰ Consequently, during the rulemakings I participated in during my tenure at the Agency, we considered the goal of protecting human health and the environment to be the primary objective of the rulemaking, a goal that had to be met in order for the regulations to be promulgated. Certainly, in developing the UST regulations and other RCRA regulations with the same Congressional objective, the EPA carefully considers economic impacts as well as other potential impacts on regulated parties and makes every effort to reduce these impacts. However, these other considerations are necessarily “trumped” by the overarching mandate to protect human health and the environment. That is, the EPA must meet this protection objective in order to satisfy the specified Congressional objective. From my experience, the EPA will not issue regulations unless it is satisfied this objective has been met.

2. The EPA adopted regulations for USTs that it determined were protective of human health and the environment.

It is clear from the regulatory record, that the EPA did in fact believe that it had developed regulations that were protective of human health and the environment as mandated by Congress. In the preamble to the final federal UST rules, the EPA clearly stated that its goal in promulgating the regulations was to protect human health and the environment:

*The UST program must be based on sound national standards that protect human health and the environment.*¹¹

The new regulations established baseline federal standards for all new and existing UST systems. The regulations included the following elements:

- All new UST systems must meet standards to ensure that the tank system retains its structural integrity for its operating life. The new standards

¹⁰ One exception in RCRA is found in Section 3014, where Congress directed EPA to develop regulations for the management of used oil. In this situation, Congress required EPA to protect human health and the environment but also to evaluate the economic impact on the oil recycling industry and to consider impacts on this industry during the rulemaking. No similar direction to consider economic impacts was included in the Congressional provisions for underground storage tanks. In other statutes, Congress has directed the EPA to balance the protection of human health and the environment with economic considerations. For example, in TSCA, Congress charged the EPA with addressing “unreasonable risk of injury to health or the environment.” Unreasonable risk was determined by an analysis of chemical risks compared with chemical benefits. Moreover, Congress specifically noted that authority over chemical substances “should be exercised in such a manner as not to impede unduly or create unnecessary economic barriers to technological innovation.” Congress also stated that it was Congressional intent that “the Administrator shall carry out this chapter in a reasonable and prudent manner and that the Administrator shall consider the environmental, economic, and social impact of any action the Administrator takes or proposes to take under this chapter.”

¹¹ 53 FR 37083, September 23, 1988.

sources. Based on this and previous studies, the EPA concluded that “*the major cause of releases from UST systems are due to failures of unprotected tanks, leaks in delivery piping, leaks from vent pipes and fittings on top of the tank, and spill and overfill errors.*”²⁹ Consequently, the EPA had a good overview of the full range of tank failure modes that needed to be addressed under the federal regulatory program.

While these four reports were the major studies directly sponsored by the EPA to support its rulemaking, the Agency reviewed numerous other studies and reports regarding the scope of the UST problem and causes of UST releases. These included studies and reports prepared by industry groups, such as the American Petroleum Institute, as well as studies conducted by Suffolk County, New York analyzing tanks replaced under the County’s tank upgrading program and numerous others. As a result, the EPA issued its federal regulations with the benefit and support of the most comprehensive review of the scope, nature and causes of the UST problem available at that time. There is little evidence that the EPA lacked any pertinent available information on this subject, including information that may have been generated at various times by the petroleum industry and not submitted to the Agency.

In addition to studies of the scope and causes of UST releases, the EPA vested considerable time and resources in evaluating available tank technologies, operating practices, and remedial technologies. In addition, the EPA undertook extensive review of both existing state and local UST regulatory programs, several of which had been implemented years earlier than the federal program, as well as existing regulatory programs in Europe. Consequently, the EPA had a comprehensive, thorough, and in-depth understanding of relevant technical and programmatic issues at the time it promulgated its federal regulations.

- 6. In developing the UST regulations, the EPA utilized a series of intra-agency working groups to provide input and perspective from different EPA program offices, to identify potential innovative regulatory approaches, and to review draft regulations. These working groups also included representatives from state regulatory agencies as members.**

As is common in significant rulemakings such as the 1988 federal UST regulations, the EPA’s process for internally reviewing the regulations prior to promulgation included the organization of a set of intra-agency working groups. These intra-agency working groups were designed to ensure major Agency regulations incorporated a wider Agency perspective, particularly the perspective from different media (e.g., air, water, etc.) areas. The intra-

²⁹ 53 FR 37088, September 23, 1988.

gasoline, and such knowledge did not change the EPA's determination that the UST regulations would protect human health and the environment.

Mr. Moreau alleges that the petroleum companies either withheld or attempted to “*whitewash*” information regarding the existence of MtBE in gasoline, the properties of MtBE, and the fact that MtBE was a constituent found during the remediation of leaking UST sites if one knew to look for it. He suggests that this lack of available information about MtBE led to UST regulations and practices that focused only on certain basic constituents of gasoline, which Mr. Moreau claims have properties sufficiently different than MtBE such that “*the presence of MtBE in gasoline required a much more stringent standard of care.*”³¹ But, the record shows that the EPA did understand that gasoline could and did contain a broad range of constituents, including MtBE. The EPA had access to information regarding the nature of MtBE and the potential for MtBE to be a constituent of concern during remediation. In fact, the EPA clearly understood that gasoline could contain a wide array of constituents and that its regulations would have to provide sufficient protection for this array of constituents.

1. At the time the EPA issued the UST regulations, it understood that petroleum products storing gasoline could contain a range of additives.

Mr. Moreau strives hard to differentiate MtBE from all other known constituents in gasoline and imply that there was a certain acceptable tolerance of releases of “*traditional*” gasoline constituents because these constituents were biodegradable and less soluble. This distinction allows Mr. Moreau to imply that the generally accepted standard of care for managing an UST system under the framework of the federal UST standards would have been deemed unacceptable if the presence of MtBE in gasoline had been considered.

But the EPA clearly understood that gasoline could contain a broad array of constituents including numerous and constantly-changing additives. It also understood that many of these constituents were quite harmful and toxic and that small releases of these constituents could cause harm to human health and the environment. In one of the early studies leading Congress to take action on the UST issue, the Congressional Research Service made this point quite clearly:

Typical contents of gasoline include benzene, toluene, and xylene, and additives such as ethylene dibromide, tetramethyllead, and ethylene dichloride. Benzene and ethylene dibromide are suspected carcinogens and other components may cause a variety

³¹ Expert Report of Marcel Moreau, December 19, 2008, p. 23.

*of toxic effects; tetraethyllead, for example, is extremely toxic by any acute route of exposure.*³²

As pointed out in this government study, the traditional constituents of gasoline included known carcinogens, such as benzene. In fact, the carcinogenetic potential of benzene is considerably better documented than the chronic effects of MtBE.³³ Similarly, it was well known that gasoline could contain a range of additives and that several of these additives, including ethylene dibromide and ethylene dichloride were probable carcinogens.³⁴ Hence, the EPA clearly understood that the traditional constituents of gasoline posed real health risks when released from USTs to groundwater and that gasoline contained a broad range of additives beyond these traditional constituents which also posed toxic risks.

Similarly, the EPA had ample information that the constituents in gasoline did not remain constant and that its UST regulations would have to consider that the nature and types of constituents in gasoline could change. In 1986, in support of the UST rulemaking, the EPA contracted for a study on the fate and transport of substances released from USTs. The report identified MtBE as a “common additive” in gasoline. In addition, this study made it clear that additives both posed potential risks and were constantly changing:

*It is virtually impossible to create a detailed, specific and complete picture of additives in petroleum products. Each type of additive described above has within it many associated chemicals, and the lucrative market for effective chemical additives generates new formulations daily. Moreover, as most additives are patented, their chemical formulations and uses in specific products are considered proprietary. There are both single and multi-purpose additives, and different batches of the same petroleum product may contain either. Because of these difficulties, it is usually possible to specifically identify only the most common chemical additives.*³⁵

³² Congressional Research Service, Leaking Underground Storage Tanks: A Potential Environmental Problem, January 11, 1984.

³³ EPA’s reportable quantity requirement highlights the Agency’s concern over benzene. Under the reportable quantity regulation, the EPA establishes thresholds for releases of certain substances over which a company must promptly report the release to government officials. The reportable quantity for benzene is 10 pounds or more. In contrast, the reportable quantity for MtBE is 1,000 pounds or more. At the time the EPA established the reportable quantity for MtBE in 1995, the Agency stated: “EPA thoroughly evaluated the intrinsic properties of these substances to determine appropriate levels for the adjusted RQs; thus, this rule reflects a sound, scientific approach.” (60 FR 30926, June 12, 1995)

³⁴ The International Agency for Research on Cancer (IARC) classifies benzene as a known carcinogen supported by human data. IARC classifies ethylene dibromide and ethylene dichloride as probable/possible carcinogens supported by animal testing, while MtBE is not classified by IARC.

³⁵ Camp Dresser & McKee, Inc., Interim Report: Fate and Transport of Substances Leaking from Underground Storage Tanks, prepared for the U.S. Environmental Protection Agency, Office of Underground Storage Tanks, 1986. pps. 2-12, 2-13.

This report also noted that “*many petroleum additives are hazardous substances. Therefore, their presence in a petroleum product is important when addressing the environmental significance of leaks from underground storage tanks.*”³⁶

In another report produced the same year and included in the docket for the EPA UST rulemaking, the complexity and variability of chemical additives is again highlighted:

*Gasoline is a blend of several petroleum refinery streams which results in a complex mixture of relatively volatile hydrocarbons that includes normal and branched alkanes, cycloalkanes, alkenes, and aromatics. Certain chemicals are added to the mixture to impart desirable properties to the finished product, e.g., antioxidants, metal deactivators, antirust agents, anti-icing agents, detergents and upper cylinder lubricants. As a complex mixture that is known to vary in its composition seasonally, according to octane level, and by producer, the selection of which components of gasoline/gasoline vapor are to be evaluated for potential health effects and levels of exposure will require a close working relationship. . .*³⁷

The EPA understood that gasoline contained a wide variety of additives and that these additives could and would vary over time and that that variation would continue after the issuance of the federal UST regulations. When it issued UST regulations in 1988, regulations EPA understood to be protective, EPA did so with this knowledge of gasoline additives.

2. Information identifying MtBE as a constituent of concern in UST releases, describing the characteristics of MtBE, and identifying technologies for its remediation was included in the information the EPA considered in promulgating its UST regulations.

Not only did the EPA understand that its regulations must protect against a variety of additives, it also clearly understood that MtBE was one of the additives in gasoline. In his expert report, Mr. Moreau states that he and his colleagues provided an early warning of the potential groundwater risk posed by MtBE in a 1986 conference paper, but that the petroleum industry “*objected to the tone of the paper*” and attempted to thwart its publication. Mr. Moreau elsewhere states that industry representatives attempted to

³⁶ *Ibid.*

³⁷ Dnyamac Corporation, Evaluation of Health Effects from Exposure to Gasoline/Gasoline Vapors, October 21, 1986, prepared for the Northeast States for Coordinated Air Use Management.

and the releases and exposures involved in chemical manufacture.⁴⁶ These TSCA rules also required manufacturers to submit all available health and safety studies on the chemical. In its regulations, the EPA clarified that health and safety studies were defined broadly to include effects of a chemical substance or mixture on health or the environment as well as any assessments of human and environmental exposure to the chemical. The covered studies included completed studies as well as ongoing studies. In addition to studies in the possession of the chemical manufacturers, the rule required a list of studies known to the manufacturer but not in its possession.

In order to expedite the collection of ITC-recommended test data, the EPA entered into a consent order negotiation process. This process evolved as a more efficient method of obtaining test data from chemical manufacturers than a formal TSCA Section 4 rulemaking under situations where a consensus could be reached between affected firms, interested members of the public, and the EPA.⁴⁷ Under the final enforceable testing consent order for MtBE, the EPA required petroleum companies to generate data on chemical fate and chronic health effects as recommended by the ITC. In finalizing the enforceable testing rule, the EPA stated that although MtBE vapor exposure via gasoline was the major concern expressed by the ITC, the EPA was also concerned about MtBE contamination of groundwater. The EPA stated that: *"Although only a few cases of groundwater contamination are currently documented, the rapid growth in production, transport, and use of MtBE will probably contribute to an increase in incidents of contamination."*⁴⁸ The Agency discussed the fact that laboratory analyses do not typically screen for this compound, that gasoline is composed of more than 50 different hydrocarbon compounds, and that a large percentage of USTs would not pass the EPA tightness test. Contamination incidents in New Jersey, New Hampshire, and Maine were noted.

Therefore, during the time that the EPA was developing the UST regulations, the Agency not only knew that MtBE was a potential groundwater contaminant, the Agency was also in the process of actively evaluating existing health and environmental information on MtBE and requiring the collection of additional MtBE health information where needed.

4. At the time the EPA issued the UST regulations, information on historical releases from USTs in which MtBE was identified as a constituent was

⁴⁶ Based in part on this submission, the EPA was aware that the annual plant capacity for MtBE production was estimated at about 4 billion pounds in 1986 and the growth rate was estimated to be 19 percent per year from 1985 to 1990. Between 1982 and 1985 production increased over 140 percent.

⁴⁷ 51 FR 23706, June 30, 1986. This procedural rule was the result of a negotiated agreement with the Chemical Manufacturers Association, the Natural Resources Defense Council, and the EPA.

⁴⁸ 53 FR 10392, March 31, 1988.

evaluating issues associated with the use of MtBE in gasoline and the adequacy of UST systems containing this gasoline. The decision by EPA to allow the use of MtBE as an oxygenate to meet Clear Air Act requirements was not made in a vacuum and without knowledge that gasoline containing MtBE would be stored in USTs. In fact, EPA officials from both the UST office and the Clean Air Act office have testified that there was significant coordination between the two offices during the development of the oxygenate program and that the issue of whether the existing standards for UST systems would adequately protect human health and the environment following the increase the use of MtBE was fully considered and addressed during this process.⁵³

If EPA receives information, such as an increase in the use of a fuel additive like MtBE, and this information indicates that existing regulations are not sufficiently protective of human health and the environment, the Agency is obligated to modify those regulations. For example, when new toxicity information becomes available on a particular contaminant, the EPA will take action to modify the protective standards for drinking water. Likewise, the EPA had both the authority and the statutory obligation to modify its UST regulation if and when new information became available that warranted such a modification. However, the EPA did not modify its UST regulations in response to the known increase in MtBE usage that would occur under the oxygenate program. It is my opinion that if the EPA had believed that the increase in the use of MtBE under the oxygenate program would present significant risks to human health or the environment, the Agency would have either restricted the use of MtBE as an oxygenate or made modifications to the existing UST regulations. While it is convenient to use 20/20 hindsight to state that either petroleum companies or the EPA should have identified the significance of the MtBE groundwater contamination problem as an issue that might require modifications to existing regulations, there is no evidence to support this when one reviews the available information and studies conducted prior to the mid-1990s.

If fact, the EPA is specifically obligated to review its regulations on a routine basis under section 610 of the Regulatory Flexibility Act (5 USC 610), a statute

⁵³ For example, see the declaration of Richard Wilson In Support of Defendants' Joint Case in Chief, *CBE v. Unocol et al*, July 16, 2001, pages 9 and 10. Mr. Wilson, who held the position of Director of the EPA Office of Mobile Sources from 1982 to 1994, stated: "During the implementation of the Winter Oxygenate and Reformulated Gasoline Programs, various issues arose concerning the health effects of MtBE, its containment in underground storage tanks, and its potential to contaminate drinking water. The Office of Mobile Sources was consistently in contact with other divisions within the EPA, specifically those responsible for drinking water and UST programs, to evaluate whether MtBE should be removed from gasoline." In an August 1, 2002 expert report prepared in the matter of *City of Dallas v. Explorer Pipeline, et al*, Mr. Wilson goes on to discuss the Agency's response to evolving MtBE groundwater contamination information in the mid-1990s including the need to concentrate on "improving UST compliance programs and helping states and cities with remediation efforts." Also see the February 2, 2001 deposition testimony of Thomas Schruben in the matter of *South Tahoe Public Utility District v. ARCO et al*. Mr. Schruben, a technical staff member of EPA's UST office, stated that he participated in the development of the oxygenate rule developed by the EPA's Office of Mobile Sources. (page 54)

that was enacted during my tenure at the EPA. This Act requires the EPA to periodically review regulations that impact small entities and, among other requirements, to examine “. . . *the degree to which technology, economic conditions or other factors have changed in the area affected by the rule.*” Certainly, new information related to MtBE would be considered such a factor and the EPA, under this provision, is required to examine such new information, including whether the cost of MtBE cleanup was impacting small entities because the existing prevention standards for USTs were insufficient.

In 1995, the EPA completed such a review and initiated another review in 1998 at which time the Agency stated its support for the efficacy of the current regulations:

*EPA continues to view this regulation as a vital component of State-EPA efforts to ensure effective detection, remediation, and prevention of UST releases in order to protect human health and the environment. EPA intends to continue to require compliance with the regulation. Until and unless the Agency modifies the rule, owners and operators of underground storage tanks will be expected to comply with all parts of the rule. The Agency performed a similar review 3 years ago and concluded at that time that there was neither a need for nor any significant stakeholder support for changes to the UST regulation.*⁵⁴

Following the implementation of the oxygenate programs in the early 1990s, the EPA continued to be aware of and study the potential exposure and health impacts of MtBE, as well as the relationship between the oxygenate program and the UST program. In the mid-1990s, EPA initiated an “*Interagency Assessment of Oxygenated Fuels.*”⁵⁵ This study brought together experts from within the federal government as well as outside the government to evaluate “*the fundamental basis and efficacy of the EPA’s winter oxygenated gasoline program*” and to consider “*air quality, ground water, and drinking water quality, fuel economy and engine performance, and the potential health effects of the oxygenated gasoline.*”⁵⁶ While the report made clear that releases from USTs containing gasoline with MtBE were potential sources of groundwater contamination, the report also noted that “*underground storage tank improvement programs underway by the states and EPA should result in reduction in the release of gasoline and fuel oxygenates to ground water from these potential point sources.*”⁵⁷

⁵⁴ 63 FR 22709, April 27, 1998. Also see EPA’s document entitled “Results of 610 Review of the Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks.” This document is located in EPA’s UST docket. In addition to concluding that the rule remains protective of human health and the environment, EPA finds that: “*The regulation, since it is performance-based, allows tank owners and operators a great deal of flexibility in choosing an appropriate compliance method, and the regulation allows for the use of newer and better technologies in the future.*”

⁵⁵ National Science and Technology Council, *Interagency Assessment of Oxygenated Fuels*, June 1997.

⁵⁶ *Ibid*, p. i..

⁵⁷ *Ibid*, p. iv.

expensive to clean up. He also argues that these same producers knew that underground storage tanks would leak “*huge quantities of gasoline with MtBE into the ground.*”⁶⁷ Yet, Mr. Moreau would then have one believe that despite this clear knowledge on the part of the industry, they would “*cross their fingers, and hope that high profile MtBE incidents would be far and few between.*” This, of course, makes no sense. If the industry had the compelling information regarding the persistence of MtBE in groundwater and the understanding that there would be huge quantities of this substance released to the environment, they would certainly have known that there would be many high profile incidents of MtBE contamination.

But Mr. Moreau must realize that if the industry had such certain knowledge that there would be many high profile incidents of MtBE contamination, there were significant liabilities that created an overwhelming incentive to minimize any such contamination. From the introduction of MtBE as an octane enhancer in 1979 through today, stringent remedial liability laws were in place at both the federal and state level. If petroleum companies knew about these inevitable leaks of MtBE, they would have also surely have known that the remedial costs and the associated litigation surrounding such MtBE contamination would be significant. Mr. Moreau is therefore suggesting that the industry would knowingly create massive remedial liability for both itself and for the many distribution facilities upon which petroleum companies rely to provide their product to end users.

Numerous liability laws were in place or enacted during the period in which MtBE has been used in gasoline. Petroleum companies have certainly been well aware of these liability laws and the significant costs they can create. The liability laws applicable to releases from USTs existed both before and certainly after Congress passed UST-specific legislation. These liability laws include cleanup provisions under Sections 7002 and 7003 of the Resource Conservation and Recovery Act (RCRA), cleanup provisions under the Clean Water Act for releases that enter surface water, the corrective action provisions under RCRA Subtitle I, and state hazardous waste, water quality, hazardous substance, and leaking underground storage tank cleanup laws.⁶⁸ In addition, various state property transfer laws create additional liability for underground storage tank owners and operators. Finally, petroleum companies were also well aware of the potential tort liability they faced from either alleged property damage or health impacts associated with contaminated sites.

It was certainly understood in the 1980s that the liability associated with USTs was potentially significant, that owners of USTs were aware of this liability, and

⁶⁷ Expert Report of Marcel Moreau, December 19, 2008, p. 73.

⁶⁸ A 1985 edition of LUSTLine notes that UST groundwater contamination prior to the federal UST cleanup law was dealt with “through Hazardous and Solid Waste Programs, special cleanup funds, groundwater management programs. . . and in a few states, like Kansas and Maryland, through specific UST regulations promulgated in the late 1970s and early 80s. (LUSTLine, December 1985).

that the existing liability framework created a strong incentive to reduce releases from USTs.⁶⁹ Mr. Moreau's own report includes several statements that demonstrate that the industry was quite concerned with the costs and liabilities associated with leaks from USTs. As an example, Mr. Moreau quotes a 1982 article from the TulsaLetter, a tank industry newsletter, stating the following:

Most marketers, by this time, have at least one costly experience with an underground oil spill. They have discovered that the expense of coping with liability claims and environmental requirements, growing out of tank leaks can far exceed other routine marketing costs. (TulsaLetter, May 20, 1982)⁷⁰

Mr. Moreau describes another incident in Colorado "*which reportedly cost Chevron over 10 million dollars*" and was published in the National Petroleum News. And he notes in 1986, one oil company stated in a memorandum that groundwater contamination had the potential to cost the company many millions of dollars.⁷¹

Mr. Moreau also acknowledges that the industry efforts to upgrade its own UST storage tanks were driven by liability concerns. He states: "*These upgrade programs were not in response to the introduction of MtBE into the nation's fuel supply but were undertaken to reduce liabilities from leaking storage systems.*"⁷² What is revealing about this statement is that Mr. Moreau admits that the industry would undertake multimillion dollar upgrade programs out of liability concerns, but would willfully ignore or "*whitewash*" the MtBE issue which would create even more significant liability.

Mr. Moreau attempts to get around this logical inconsistency by arguing that the MtBE producers "*proceeded to transfer liability for many of these releases by selling many thousands of storage systems to unsophisticated, unsuspecting businesspeople.*" (p. 71) On page 38 of his report he contends that the industry at one time owned many of the tanks that were being operated at independent service stations, but in the early 1980s began to divest of many of its USTs because "*it was not worth accepting this large liability*" associated with the tanks. Thus, he acknowledges that the industry was concerned about the potential liability associated with USTs and that to eliminate this liability it sold off many of its USTs to small retail establishments who were "*unsophisticated*" and "*unsuspecting.*"

⁶⁹ The EPA Regulatory Impact Analysis of Technical Standards for USTs, August 24, 1988, page 4-8, estimated the discounted costs of the 1988 UST rule's corrective action requirements at close to \$30 billion dollars.

⁷⁰ Expert Report of Marcel Moreau, December 19, 2008, p. 38

⁷¹ Expert Report of Marcel Moreau, December 19, 2008, pps. 39 and 60.

⁷² Expert Report of Marcel Moreau, December 19, 2008, p. 35.

It is certainly true that petroleum companies did divest many USTs that were located at retail operations not owned by the oil company itself. This was not only a common practice with petroleum USTs during this period, but also with other chemical and waste units. As these types of units became highly regulated under RCRA and similar state laws, many companies did not want to own units that were not under their direct control. This did not, as Mr. Moreau implies, represent a nefarious plot by petroleum companies and others to unload significant liabilities on unsuspecting small businesses. It was instead a logical action to ensure that the accountability for operating the UST in full compliance with applicable laws and regulations lay with the entity that had day-to-day responsibility for operating the UST.⁷³

Furthermore, petroleum companies, even after divesting certain USTs, continued to own thousands of USTs and, therefore, continued to be directly exposed to the potential liability associated with these USTs. In addition, Mr. Moreau offers no factual evidence that the industry intentionally unloaded its USTs on unsuspecting small retail operations while knowing full well these retail operations would suffer significant releases of MtBE. In fact, it makes no logical sense that an industry would knowingly subject the businesses that are directly responsible for selling its product to the consumer to massive liability, knowing full well that this liability would likely drive many of these operations out of business.

F. Opinion #6: Mr. Moreau inaccurately states that throughout the 1980s and in to the 1990s, small releases of petroleum product from USTs were of minimal concern to either petroleum companies or the EPA.

Throughout his report, Mr. Moreau contends that there was a tolerance by petroleum companies and regulators for small releases from USTs because it was believed that the small releases of the “normal” constituents in gasoline were not problematic. The history of the HSWA statute and EPA’s regulatory development process do not support Mr. Moreau’s opinion and, in fact, small leaks and spills were a great concern to government officials regardless of whether the gasoline contained MtBE or not.

In one of the key studies leading to federal UST legislation in 1984, the issue of small releases and leaks was highlighted:

Small leaks can magnify into large problems; an underground tank leaking two drops/second will release 1.2 gallons/day or 36 gallons/month; a tank leaking a 1/4-inch stream will release 931 gallons/day, or 27,936 gallons/month.

⁷³ Such a transfer of regulated assets was common at several companies I have been affiliated with, including BFI, Safety-Kleen, and other companies that have engaged me as a consultant.

And then again, in the initial debate on the federal UST law, Congress identified small releases as significant:

*The emerging statistics on leaking underground storage tanks are ominous. It is estimated that a 1 gallon a day leak of gasoline from a tank can poison the water supply of 50,000 persons.*⁷⁴

And,

*A leak of only 1 gallon a day from a single service station is enough to pollute the water of a 50,000-person community to 100 parts per billion, according to the Environmental Protection Agency.*⁷⁵

The EPA was also acutely aware of the potential impact of small releases and spills in adopting the federal UST regulations. In the 1987 preamble to the proposed UST regulations, the EPA identified spills and overfills as a major cause of UST releases and noted that these types of spills were often small. The EPA was clearly concerned about such small spills:

*Although these spills are usually small, frequent spills can accumulate to sizable volumes over a period of time. Even repeated small spills eventually contaminate the soil and can affect groundwater. Repeated spills may increase the corrosive nature of soil and thus accelerate the corrosion of unprotected steel tanks.*⁷⁶

For this reason, the EPA designed its regulations to address all petroleum releases. While the Agency recognized that not all small releases would be identified with existing leak detection methodology, the regulations did incorporate other small spill release prevention mechanisms such as overfill protection. Moreover, all spills were covered by the regulation's corrective action provisions. Hence, the EPA's regulatory program included several components for protecting the environment, of which leak detection capable of identifying very small releases was only one.

VII. Response to Specific Statements in Mr. Moreau's Report

Throughout his report, Mr. Moreau makes numerous statements that are either unsupported or do not accurately represent the historical record. While I have noted several of these in the main body of my report, other examples include the following.

⁷⁴ Statement of Senator Lautenberg during the Senate Debate on the Hazardous and Solid Waste Amendments, October 5, 1984.

⁷⁵ Statement of Senator Durenberger during the Senate Debate on the Hazardous and Solid Waste Amendments, February 29, 1984.

⁷⁶ 52 FR 12668, April 17, 1987.